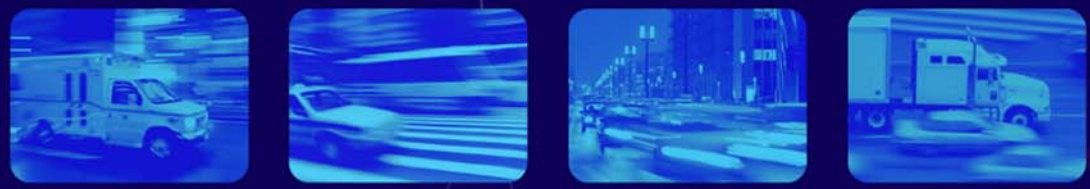
Intelligent Transportation Systems
U.S. Department of Transportation



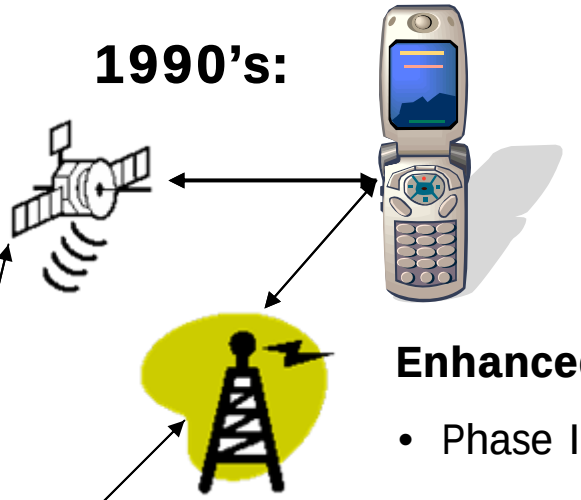
# U.S. DOT Next Generation 9-1-1 Project: A National Framework and Deployment Plan

# The Current 9-1-1 System

NG9-1-1

1968:

1990's:



**Enhanced 9-1-1:**

- Phase I
- Phase II

2000's:


**Basic 9-1-1:**

- Copper Land Line
- Analog Technology

??? 1968

# Problem Statement

NG9-1-1

# Consensus within the 9-1-1 Community

NG9-1-1

Capitalize on advances in technologies that provide:

- ✓ Quicker and more accurate information delivery to responders and the public alike
- ✓ Better and more useful forms of information (real-time text, images, video, and other data)
- ✓ More flexible, secure and robust Public Safety Answering Point (PSAP) operations
- ✓ Increased sharing of data, resources, procedures, and standards to improve emergency response
- ✓ Maximized use of available public capital and operating costs for emergency communication services
- ✓ Promotion of increased coordination and partnerships within the emergency response community

# Today's 9-1-1 versus NG9-1-1

| Today's 9-1-1 | Next Generation 9-1-1 |
|---|---|
| Virtually all calls are voice callers via telephones over analog lines. | Voice, text, or video information, from many types of communication devices, sent over IP networks |
| Most information transferred via voice | Advanced data sharing is automatically performed |
| Callers routed through legacy selective routers, limited forwarding / backup ability | Physical location of PSAP becomes immaterial, callers routed automatically based on geographic location, enhanced backup abilities |
| Limited ability to handle overflow situations, callers could receive a busy signal | PSAPs able to control call congestion treatment, including dynamically rerouting callers |

# USDOT NG9-1-1 Project

## Background:

*This project is a research and development project, funded by the USDOT's Intelligent Transportation Systems (ITS) Joint Program Office (JPO), that will define a NG9-1-1 system architecture and develop a transition plan that considers responsibilities, costs, schedule and benefits for deploying Internet Protocol (IP)-based emergency communications across the nation.*

## Long Term Goal:

*To enable the general public to make a 9-1-1 "call" (any real-time communication – voice, text, or video) from any wired, wireless, or IP-based device, and allow the emergency services community to take advantage of Enhanced 9-1-1 (E9-1-1) call delivery and other functions through new internetworking technologies based on open standards.*

# NG9-1-1 Project: Team Members

- Booz Allen Hamilton
  - Leading technology and management consulting company
  - Experience in supporting far-reaching public safety communications efforts
- National Emergency Number Association (NENA)
  - The “National Voice” of the 9-1-1 community
  - Team of experts with direct NG9-1-1 experience and knowledge
- L. Robert Kimball & Associates
  - Leader in design and implementation of E9-1-1 / IP-based E9-1-1 systems
  - Relevant technical expertise and domain knowledge of public safety operations
- Texas A&M University Internet2 Technology Evaluation Center
  - Developer of a prototype of the NG9-1-1 system

# Tasks of the NG9-1-1 Project / Status

## Task 1: System Architecture Development [Completed]

- ☑ Revised Concept of Operations (ConOps)
- ☑ Define functional requirements
- ☑ High-level architectural design


## Task 3: Proof of Concept (POC) [Currently Underway]

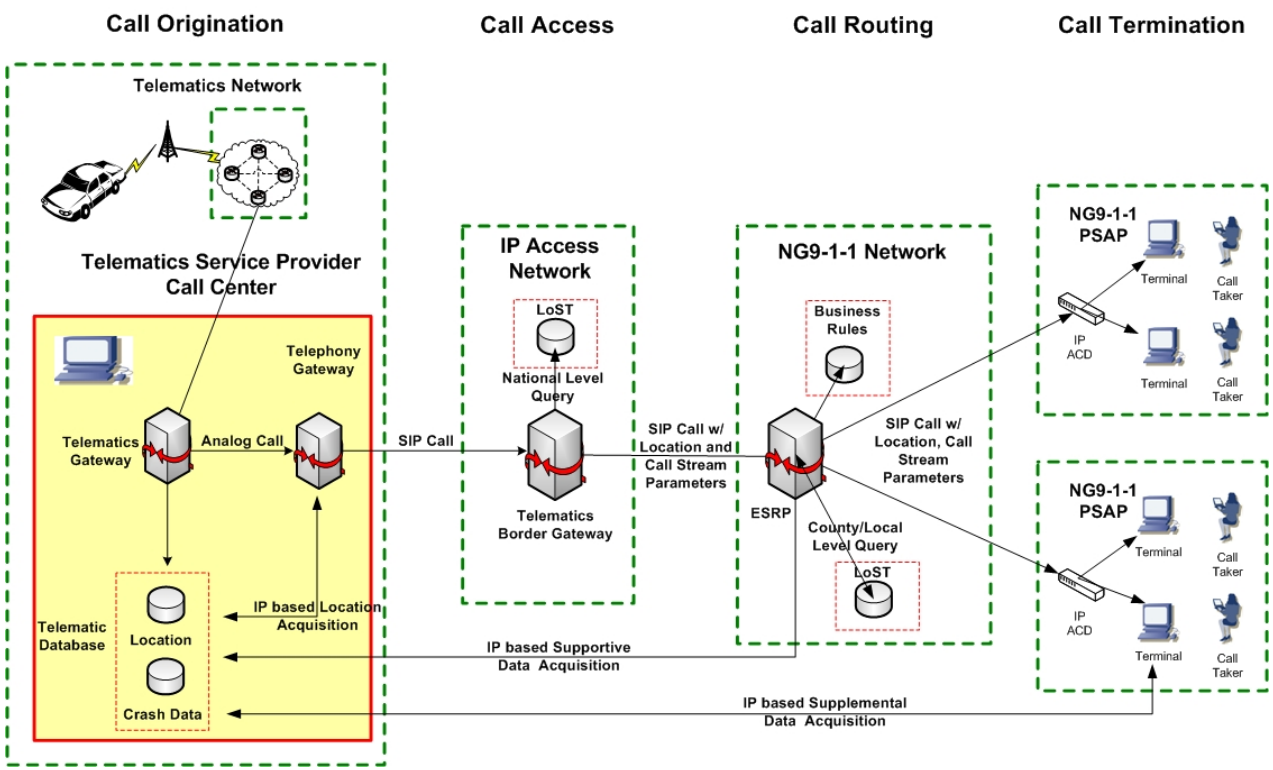
# Proof of Concept Participants

# Scope of the Proof of Concept

NG9-1-1

- **Testing of Selected Requirements:**
  - Ability to receive voice, video, text (IM, SMS) and data
  - Support for deaf/hearing-impaired accessibility
  - Caller's location identification
  - Transmitting telematics data (Advanced Automatic Crash Notification) like speed, vehicular rollover, crash velocity
  - Call routing based on caller's location
  - IP networking and security

# Vehicle Telematics in NG9-1-1

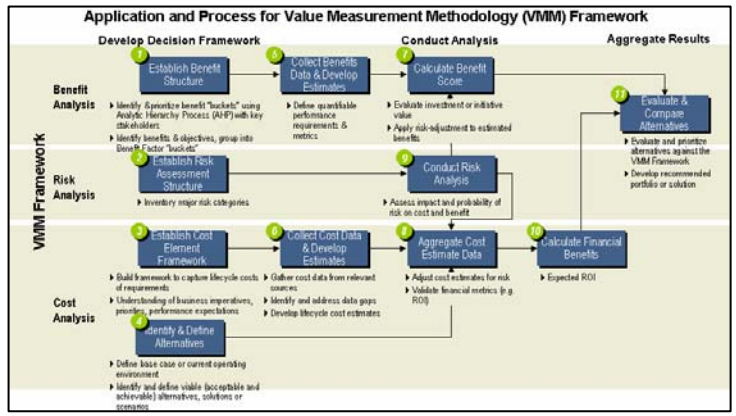



- After a vehicle equipped with an Advanced Automatic Crash Notification system is involved in an accident, the Telematics Service Provider is notified
- The essential data (including the GPS vehicle location) is used to route the call to the appropriate PSAP
- The PSAP receives the audio channel as well as the initial set of data
- A query for supplemental and supportive data is made to the Telematics Service Provider (i.e. additional subscriber-based information)
- All the data (NG9-1-1 and telematics) is forwarded for use by dispatch and the emergency responders which can influence the emergency response

# Tasks of the NG9-1-1 Project / Status

## Task 2: Preliminary Transition Analysis [Completed]

- Preliminary Analysis of Cost, Value and Risk
- Report on Critical Deployment Issues




## Task 4: Final Transition Planning

# Transition Planning

NG9-1-1

- **Cost, Value & Risk**
- **Transition Issues**
  - Funding
  - Operations
  - Standards & Technology
  - Governance & Policy
- **Deployment Approaches**
  - Independent, Unilateral (bottom up)
  - Coordinated, Intergovernmental (top down)


- **Strategies**
- **Options**
- **Models**

# NG9-1-1 Initiative Documents Available

http://www.its.dot.gov/NG911

- Revised Concept of Operations
- Functional Requirements
- Architecture Design
- Preliminary Analysis of Cost, Value and Risk
- Transition Issues Report
- Human Machine Interface Display
- Proof of Concept Deployment Plan
- NG9-1-1 Transition Issues Report
- Data Acquisition and Analysis Plan NEW
- Preliminary Transition Plan NEW

# *After November 2008…*

Requirements

Standards

Transition Plan

Acquisition Tools

**National**

**Office**

- **DOT / DOC – Joint Program**
- **Housed @ USDOT / NHTSA**

# Contact Information:

*Would you like to be added to the NG9-1-1 Email Distribution List?*

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**Visit USDOT's NG9-1-1 website: http://www.its.dot.gov/ng911/**